

Notice of Allowability

Application No.

09/749,440

Examiner

Thoi V. Duong

Applicant(s)

CHOI ET AL.

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE filed 05/30/2005.
2. ☒ The allowed claim(s) is/are 1-10, 12-18 and 20-33.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 30, 2006 has been entered.

Accordingly, claims 1, 10 and 18 were amended, claims 11 and 19 were cancelled, and new claims 26-33 were added. Currently, claims 1-10, 12-18 and 20-33 are pending in this application.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the claims:

Claim 28: after "claim" in line 1, delete "28" and inset --26--.

In the title: change the title as "Fabricating method for liquid crystal panel implementing ferroelectric liquid crystal and operating in a monostable state."

Allowable Subject Matter

3. Claims 1-10, 12-18 and 20-33 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claims 1, 10 and 18, none of the prior art of record discloses, in combination with other limitations as claimed, a method of fabricating a liquid crystal display device comprising: forming a ferroelectric liquid crystal layer between the first and second substrates of the liquid crystal panel; cooling the liquid crystal panel to a predetermined temperature so as to produce monostable alignment within the ferroelectric liquid crystal; heating the cooled liquid crystal panel substantially to room temperature; and operating the liquid crystal display device in a monostable state.

The most relevant reference, US 5,583,682 to Kitayama et al. (Kitayama), fails to disclose or suggest operating the liquid crystal display device in a monostable state. As shown in Fig. 1, Kitayama discloses forming a ferroelectric liquid crystal layer 15 between the first and second substrates of the liquid crystal panel (col. 5, lines 3-14 and col. 6, lines 18-23); cooling the liquid crystal panel to a predetermined temperature (-30 degrees C) so as to produce monostable alignment within the ferroelectric liquid crystal (col. 12, Table 1); and heating the cooled liquid crystal panel substantially to room temperature (30 degrees C) (col. 9, lines 30-42; col. 10, lines 40-41; and col. 12, lines 13-20). However, Kitayama suggests operating the liquid crystal display device in two stable states (bistability) (col. 2, lines 25-30).

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Re claim 26, none of the prior art of record discloses, in combination with other limitations as claimed, a method of fabricating a liquid crystal display device comprising cooling the liquid crystal panel to -20 degrees C so as to produce monostable alignment within the ferroelectric liquid crystal.

The most relevant reference, USPN 5,583,682 to Kitayama et al. (Kitayama), fails to disclose or suggest a predetermined temperature being in a range around -20 degrees C. As shown in Table I (col. 12), Kitayama discloses that monostable alignment within the ferroelectric liquid crystal is produced when cooling the liquid crystal panel to -30 degrees C.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi Duong



7/26/2006


DUNG T. NGUYEN
PRIMARY EXAMINER